

INCH-POUND

MS27391D  
24 September 2003  
SUPERSEDING  
MS27391C  
23 August 86

## DETAIL SPECIFICATION SHEET

### NIPPLE, FLARELESS, TUBE TO HOSE - SWIVEL NUT

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein  
shall consist of this specification and MIL-DTL-27272

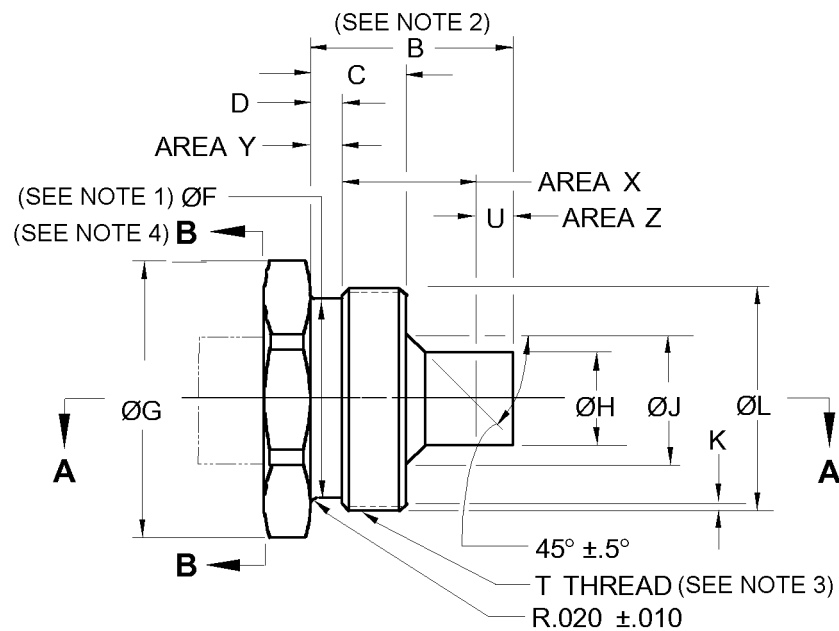
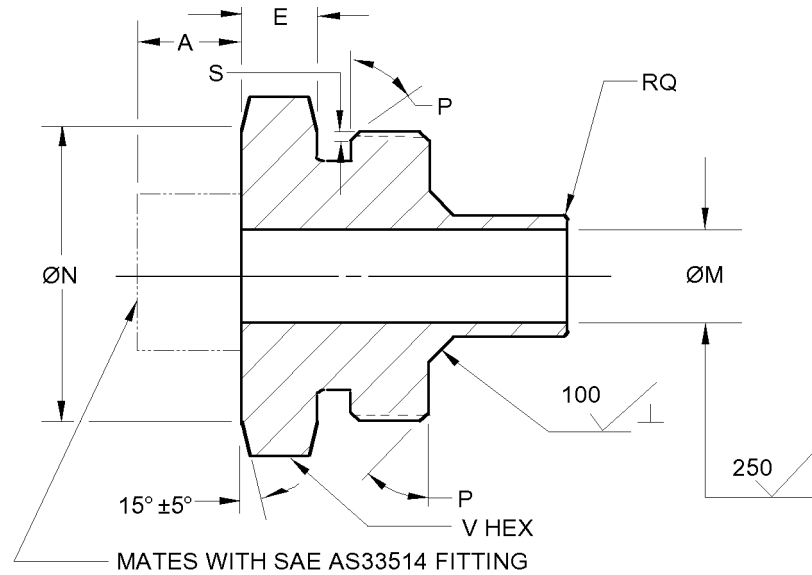


FIGURE 1. Nipple illustration.

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SECTION A-A

NOTES:

1. Thread gage must enter thread relief (sizes -10 through -24 only).
2. All diameters within B dimension shall be concentric within .005 full indicator movement.
3. Threads shall be in accordance with SAE AS8879 except for -8 and -24 sizes, which shall be in accordance with ANSI ASME B1.1. Threads shall be rolled on corrosion-resistant steel only.
4. Any design to the left of plane B-B is acceptable provided the dimension A and the requirements of this specification sheet and the procurement specification are met.

FIGURE 1. Nipple illustration - Continued.

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### REQUIREMENTS

**Intended use.** This part is a component of MS27386. This is a design standard for manufacturing purposes. The item is only procured as an integral part of adapter assemblies.

**Identification of product.** The Part or Identifying Number (PIN) for this part shall be as specified in table I (e.g., MS27391-4C).

**Dimensions and tolerances.** Dimensions are in inches. Unless otherwise specified, break or radius all corners .005, +.005, -.000. All diameters must be concentric within .010 full indicator movement.

**Material.** PIN suffix C, corrosion-resistant steel, class 304, condition A, in accordance with SAE AMS-QQ-S-763.

PIN suffix D. Aluminum alloy, 6061-T651, in accordance with SAE AMS-QQ-A-225/8.

**Finish.** Corrosion-resistant steel, passivate in accordance with SAE AMS-QQ-P-35. Dry-film lubricate area X with lubricant conforming to SAE AS1701. Dry-film lubrication allowed in area Y. No dry-film lubrication allowed in area Z.

Aluminum alloy. Anodize in accordance with MIL-A-8625, type II, dye yellow.

**Surface roughness.** Unless otherwise specified, maximum surface roughness shall not exceed 125  $\mu$ in.  $R_a$  in accordance with ASME B46.1.

**Order of precedence.** This specification takes precedence over the documents referenced herein. Unless otherwise specified, referenced documents shall be of the issue in effect on the date of solicitation.

Remove all burrs and slivers.

Nipple illustration. See figure 1.

TABLE I. Nipple requirements.

| PIN<br>MS27391 |      | A<br>$\pm .010$ | B $\frac{1}{2}$<br>$\pm .005$ |       | C<br>$\pm .005$ |      | D<br>$\pm .005$ |      |
|----------------|------|-----------------|-------------------------------|-------|-----------------|------|-----------------|------|
| Steel          | Alum |                 | Steel                         | Alum  | Steel           | Alum | Steel           | Alum |
| -3/-4C         | -    | .533            | .735                          | -     | .255            | -    | .075            | -    |
| -4C            | -    | .518            |                               | -     |                 | -    |                 | -    |
| -5C            | -    | .588            | .730                          | -     | .250            | -    | .085            | -    |
| -6C            | -    | .617            |                               | -     |                 | -    | .050            | -    |
| -8C            | -8D  | .717            | .870                          | .865  | .270            | .265 | .085            | .080 |
| -10C           | -10D | .824            | .950                          | .957  | .300            | .307 | .100            | .107 |
| -12C           | -12D | 1.028           | 1.035                         | 1.018 | .360            | .343 |                 | .083 |
| -16C           | -16D | 1.028           | 1.120                         | 1.100 | .390            | .370 | .110            | .090 |
| -20C           | -20D | 1.110           | 1.335                         | 1.341 | .400            | .406 | .085            | .091 |
| -24C           | -24D | 1.367           | 1.480                         | 1.480 | .500            | .500 | .100            | .100 |

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TABLE I. Nipple requirements - Continued.

| PIN<br>MS27391 |      | E<br>±.005 |      | F 2/  |       | G     |                | H<br>+.000<br>-.005 | J<br>±.005 | K    |       |
|----------------|------|------------|------|-------|-------|-------|----------------|---------------------|------------|------|-------|
| Steel          | Alum | Steel      | Alum |       |       |       |                |                     |            |      |       |
| -<br>3C/4C     | -    | .125       | -    | .400  | ±.005 | .620  | ±.005          | .210                | .295       | .031 | ±.005 |
| -4C            | -    |            | -    |       |       |       |                |                     |            |      |       |
| -5C            | -    |            | -    |       |       |       |                |                     |            |      |       |
| -6C            | -    | .135       | -    | .430  | ±.010 | .675  | +.015<br>-.000 | .273                | .360       | .015 | max   |
| -8C            | -    |            | -    | .495  |       | .750  |                | .335                | .425       |      |       |
| -10C           | -8D  |            | .155 | .600  |       | .960  |                | .431                | .530       |      |       |
| -12C           | -10D | .170       | .163 | .785  | ±.010 | 1.105 |                | .531                | .625       | .031 | ±.005 |
| -16C           | -12D | .190       | .207 | .910  |       | 1.385 |                | .655                | .760       |      |       |
| -20C           | -16D | .220       | .240 | 1.277 |       | 1.680 |                | .905                | 1.040      |      |       |
| -24C           | -20D | .280       | .274 | 1.589 |       | 1.979 |                | 1.156               | 1.275      |      |       |
| -24C           | -24D |            | .280 | 1.828 |       | 2.340 |                | 1.406               | 1.550      |      |       |

| PIN<br>MS27391 |      | L     |                | M     |                | N<br>±.02 | P<br>±5° |      | Q    |                | S    |       |
|----------------|------|-------|----------------|-------|----------------|-----------|----------|------|------|----------------|------|-------|
| Steel          | Alum |       |                |       |                |           | Steel    | Alum |      |                |      |       |
| -3C/-4C        | -    | .500  | +.000<br>-.006 | .161  | +.005<br>-.000 | .53       | 45°      | -    | .015 | +.005<br>-.000 | .031 | ±.005 |
| -4C            | -    |       |                |       |                |           |          | -    |      |                |      |       |
| -5C            | -    |       | +.000          |       |                |           |          | -    |      |                |      |       |
| -6C            | -    | .562  | -.007          | .224  | +.006<br>-.000 | .59       | 30°      | -    | .020 | ±.005          | .015 | max   |
| -8C            | -    | .625  |                | .261  |                | .66       |          | -    |      |                | .031 | ±.005 |
| -10C           | -8D  | .750  |                | .345  |                | .84       |          | -    |      |                | -    | -     |
| -12C           | -10D | .875  | +.000          | .440  | -.000          | .97       | 45°      | 30°  | .030 |                | -    | -     |
| -16C           | -12D | 1.000 | -.008          | .560  |                | 1.22      |          |      |      |                | -    | -     |
| -20C           | -16D | 1.375 | +.000          | .828  |                | 1.47      |          |      |      |                | -    | -     |
| -24C           | -20D | 1.688 | -.009          | 1.058 | +.005<br>-.000 | 1.78      |          |      | .035 |                | -    | -     |
| -24C           | -24D | 1.938 | +.000<br>-.010 | 1.282 |                | 2.09      |          |      |      |                | -    | -     |

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TABLE I. Nipple requirements - Continued.

| PIN<br>MS27391 |      | T 3/                   |                | U          |      | V<br>±.02 |
|----------------|------|------------------------|----------------|------------|------|-----------|
| Steel          | Alum | Thread                 | Pitch diameter | Steel only |      |           |
| -3C/-4C        | -    | .5000 - 28 UNJEF - 3A  | .4768/.4740    | .25        | ±.05 | .56       |
| -4C            | -    |                        |                |            |      |           |
| -5C            | -    | .5625 - 24 UNJEF -3A   | .5354/.5325    | .32        | ±.12 | .62       |
| -6C            | -    | .6250 - 24 UNJEF -3A   | .5979/.5949    |            |      | .69       |
| -8C            | -8D  | .7500 - 24 UNS -3A     | .7229/.7198    |            |      | .88       |
| -10C           | -10D | .8750 - 20 UNJEF -3A   | .8425/.8392    | .35        | ±.15 | 1.00      |
| -12C           | -12D | 1.0000 - 20 UNJEF -3A  | .9675/.9641    |            |      | 1.25      |
| -16C           | -16D | 1.3750 - 18 UNJEF - 3A | 1.3389/1.3353  | .39        | ±.19 | 1.50      |
| -20C           | -20D | 1.6875 - 18 UNJEF - 3A | 1.6514/1.6476  | .48        | ±.28 | 1.81      |
| -24C           | -24D | 1.9375 - 16 UN - 3A    | 1.8969/1.8929  | .50        | ±.30 | 2.12      |

1/ All diameters within B dimension shall be concentric within .005 full indicator movement.

2/ Thread gage must enter thread relief (sizes -10 through -24 only).

3/ Threads shall be in accordance with SAE AS8879 except for -8 and -24 sizes, which shall be in accordance with ANSI ASME B1.1. Threads shall be rolled on corrosion-resistant steel only.

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extent of the changes.

## CONCLUDING MATERIAL

### Custodians:

Army - AV  
Navy - AS  
Air Force - 99  
DLA - CC

### Preparing activity:

DLA - CC

(Project 4730-0868-073)

### Review activities:

Army - AT, MI  
Navy - MC, SA, SH  
Air Force - 71